

IN THE CLAIMS

Please amend the claims as follows.

1. (Currently amended) An article comprising:
 - a heat spreader including a die side and a heat-sink side;
 - a first channel through the heat spreader that communicates from the die side to the heat-sink side;
 - a container barrier disposed on the heat spreader die side, wherein the container barrier and the heat spreader form a recess upon the die side; and
 - a first channel through the container barrier, wherein the first channel is adjacent the heat spreader die side; and
 - a first plug disposed in the first channel through the container barrier.
2. (Canceled).
3. (Currently Amended) The article of claim 1, further including:
 - ~~a first channel through the heat spreader to communicate from the die side to the heat-sink side;~~
 - a first plug disposed in the first channel through the heat spreader;
 - a second channel through the heat spreader to communicate from the die side to the heat-sink side.
4. (Previously Presented) The article of claim 1, wherein the first plug disposed in the first channel through the container barrier is gas-permeable and liquid-impermeable.
5. (Previously Presented) The article of claim 1, further including:
 - a first plug disposed in the first channel through the heat spreader, wherein the first plug is gas-permeable and liquid-impermeable;

a second channel through the container barrier to communicate from the die side to the heat-sink side; and

a second plug disposed in the second channel through the heat spreader, wherein the second plug is gas-permeable and liquid-impermeable.

6. (Original) The article of claim 1, wherein the container barrier is selected from a solder, a leaded solder, a lead-free solder, a reactive solder, an indium material, a tin material, a silver material, a tin-silver material, a tin-silver-indium material, and combinations thereof.

7. (Original) The article of claim 1, wherein the container barrier is selected from a metal; a polymer-solder hybrid; a polymer matrix and a metal preform; and a polymer matrix, a metal preform, and a middle heat transfer structure disposed therebetween.

8. (Original) The article of claim 1, further including:
a liquid heat-transfer medium disposed in the recess.

9. (Original) The article of claim 1, further including:
a liquid heat-transfer medium disposed in the recess, wherein the liquid heat-transfer medium is selected from an organic composition, a metal, and combinations thereof.

10. (Currently amended) A package comprising:
a heat spreader including a die side and a heat-sink side;
a first channel through the heat spreader to communicate from the die side to the heat-sink side;
a first plug disposed in the first channel through the heat spreader;
a container barrier disposed on the heat spreader die side, wherein the container barrier and the heat spreader forms a recess upon the die side;
a liquid heat-transfer medium disposed in the recess; and

a first channel through the container barrier, wherein the first channel is adjacent the heat spreader die side.

11. (Original) The package of claim 10, wherein the heat spreader is selected from a heat slug, a heat pipe, and an integrated heat spreader.

12. (Original) The package of claim 10, wherein the die side of the heat spreader includes a convoluted interface with the liquid heat-transfer medium.

13. (Canceled).

14. (Currently amended) The package of claim 10, further including:
~~a first channel through the heat spreader to communicate from the die side to the heat-sink side;~~
~~a first plug disposed in the first channel through the heat spreader;~~
a second channel through the heat spreader to communicate from the die side to the heat-sink side.

15. (Previously Presented) The package of claim 10, further including:
a first plug disposed in the first channel through the container barrier.

16. (Previously Presented) The package of claim 10, further including:
a first plug disposed in the first channel through the heat spreader; and
a second channel through the container barrier.

17. (Original) The package of claim 10, further including:
a die in contact with the liquid heat transfer medium.

18. (Original) The package of claim 10, further including:
a die in contact with the liquid heat transfer medium; and

a mounting substrate coupled to the die.

19-26. (Canceled).

27. (Currently amended) A computing system comprising:

a heat spreader including a die side and a heat-sink side;

a first channel through the heat spreader that communicates from the die side to the heat-sink side;

a container barrier disposed on the heat spreader die side, wherein the container barrier and the heat spreader form a recess upon the die side;

a first channel through the container barrier, wherein the first channel is adjacent the heat spreader die side;

a die in contact with the container barrier;

a liquid heat-transfer medium disposed in the recess; and

dynamic random access memory coupled to the die.

28. (Original) The computing system according to claim 27, wherein the computing system is disposed in one of a computer, a wireless communicator, a hand-held device, an automobile, a locomotive, an aircraft, a watercraft, and a spacecraft.

29. (Original) The computing system according to claim 27, wherein the die is selected from a data storage device, a digital signal processor, a micro-controller, an application specific integrated circuit, and a microprocessor.

Claims 30-33. (Canceled)